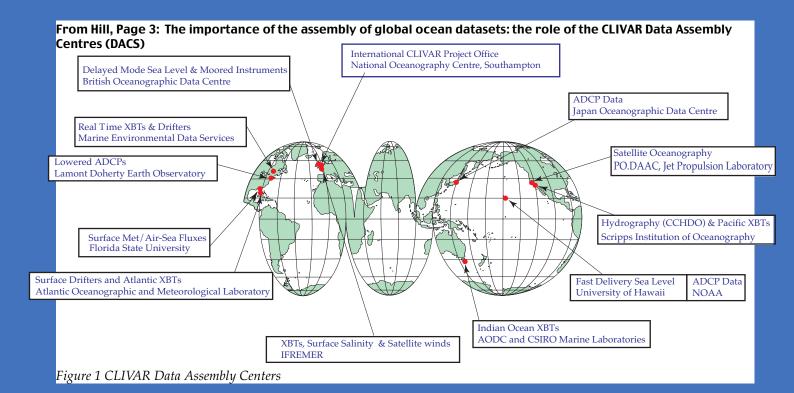
#### **Newsletter of the Climate Variability and Predictability Programme (CLIVAR)**



# **Exchanges**

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**CLIVAR** is an international research programme dealing with climate variability and predictability on time-scales from months to centuries.



CLIVAR is a component of the World Climate Research Programme (WCRP). WCRP is sponsored by the World Meteorological Organization, the International Council for Science and the Intergovernmental Oceanographic Commission of UNESCO.

#### Latest CLIVAR News http://www.clivar.org/recent/

**See the CLIVAR Calendar** http://www.clivar.org/calendar/index.htm

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#### Call for Contributions

We would like to invite the CLIVAR community to submit papers to CLIVAR Exchanges for issue 35. The overarching topic will be on **The Southern Ocean Region and The International Polar Year.** The deadline for this issue will be July 31st 2005.

Guidelines for the submission of papers for CLIVAR Exchanges can be found under: http://www.clivar.org/publications/exchanges/guidel.htm

## The Workshop on Enhancing South and Central Asian Climate Monitoring and Indices, Pune, India, February 14–19, 2005

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The last in a series of five regional climate change workshops coordinated by the joint WMO Commission for Climatology / CLIVAR Expert Team on Climate Change Detection, Monitoring and Indices (ETCCDMI) was held in Pune, India, February 14-19, 2005. Rupa Kumar Kolli and all the people at the Indian Institute of Tropical Meteorology (IITM) did an absolutely wonderful job of hosting the workshop. My workshop teammates Phil Jones (CRU/University of East Anglia), Albert Klein-Tank (KNMI) and Mark New (Oxford University) really put their hearts into the workshop, which inspired the participants to respond in kind.

A workshop "recipe" was developed and refined during this last year. Day one started with seminars that explain how the workshop will contribute to our understanding of climate change in the region, followed by national reports from Mongolia, Kazakhstan, Tajikistan, Uzbekistan, Nepal, Bhutan, Bangladesh, Sri Lanka, Pakistan, Turkmenistan, China and the Kyrgyz Republic and India. Afghanistan was invited but the participant couldn't make it out of Kabul after a passenger plane crashed in Afghanistan the week before the meeting. Day two was devoted to Quality Control (QC) with both seminars and hands-on QC of the long-term daily data that the participants brought with them, using special software written by Xuebin Zhang (Environment Canada). A suite of 27 indices was calculated on day three, along with continuing work on QC. Day four is dedicated to homogeneity testing.

On day five, an agreement was reached on who will write the multi-authored papers documenting the changes in extremes in the region and availability of information. Participants also prepared reports showing how extremes are changing in their countries. At the workshop in Pune, all 13 countries agreed to provide their indices, the QC details they documented during their work and the homogeneity test results for a journal article and for Lisa Alexander's (Hadley Centre) global indices paper. Ten of the countries agreed to release their indices on Xuebin

Zhang's ETCCDMI indices web page. Ten countries also agreed to let the lead author keep their data so he can double check the results as necessary. One country, Sri Lanka, provided its now carefully QC'd GCOS Surface Network (GSN) data from 1869 through to 2004, to put in the GSN archive. The workshop ended at lunch on day six after reports of results from each country were given and certificates of recognition were presented to each of the participants.

The Pune workshop, like three of its predecessors, was funded through GCOS by the U.S. State Department in support of IPCC. Albert Klein-Tank volunteered to be lead author of the journal paper. He will write up the analysis, carefully evaluate each station's QC, homogeneity and indices, and pass the indices on to Lisa, all before the IPCC's deadline. Also, Rupa Kumar Kolli volunteered to coordinate a monsoon season regional extremes paper with Pakistan, Sri Lanka, Bangladesh, and Nepal (Bhutan's data were too short). Xuben Zhang graciously agreed to add two new monsoon specific indices to the software to aid the analysis.

This was a workshop that involved serious hands-on data analysis work. Combined with the results of the earlier workshops in South Africa, Brazil, Guatemala and Turkey (see Figure 1), IPCC will now be able to include analysis of changes in extremes from most of the regions of the world where no results were previously available. For many countries which are unwilling to release time series of daily station data, a suite of climate change indices are being made available for use by scientists working on climate change detection or impacts. These accomplishments would not have been possible without a collaborative, capacity-building approach and the contributions by many people in GCOS, IPCC, WMO Commission for Climatology and CLIVAR who are too numerous to thank individually here. For more information on these workshops see http://cccma.seos.uvic.ca/ ETCCDMI.



Figure 1: Earlier workshops were held in South Africa, Brazil, Guatemala and Turkey